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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/073,014	02/12/2002	Toshimichi Shintani	501.41179X00	5079

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EXAMINER

BLACKWELL RUDASIL, GWENDOLYN A

ART UNIT	PAPER NUMBER
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1775

DATE MAILED: 05/07/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/073,014	SHINTANI ET AL.	
	Examiner	Art Unit	
	Gwendolyn A. Blackwell-Rudasill	1775	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>4</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claim 1 is rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. While Applicant has indicated, page 7-lines 4-6, what the i-layer and the j-layer could be, Applicant has not indicated what the respective layers should be in the claims because the i-layer and the j-layer can be the same thing. That which is critical or essential to the practice of the invention, but not included in the claim is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). The identity of the i-layers and j-layers are important because Applicant has indicated that the layers could possibly be the same. As written, the language of claim 1 does not distinguish ~~the~~ where the layers should be in relation to each other and their function. Applicant has set forth that the i-layer and j-layer could be a lower or upper protective layer, a recording layer, a nonlinear optical layer or a reflective layer, however it is unclear what each is supposed to represent in the claim.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-2 and 18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "jth layer" in line 5. There is insufficient antecedent basis for this limitation in the claim. While the specification has stated what the jth layers could be, Applicant has indicated that a "recording film for recording information on n layers" not on jth layers. Where are the jth layers located in the recording medium?

Claim 2 recites the limitation "ith" in line 4. There is insufficient antecedent basis for this limitation in the claim. While the specification has stated what the ith layers could be, Applicant has indicated that a "recording film for recording information on n layers" not on ith layers. Where are the ith layers located in the recording medium?

Claim 18 recites the limitation "second substrate" in 5. There is insufficient antecedent basis for this limitation in the claim. Applicant has not indicated in the claims that a second substrate should be present in the information recording medium. Where is the second substrate located? To further examination, the nonlinear layer will be considered to be between the substrate and the first recording film.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of

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this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-5 and 17 are rejected under 35 U.S.C. 102(e) as being anticipated by United States Patent no. 6,385,162, Nagase et al.

Nagase et al disclose an optical disk comprising a substrate, super resolution film, first interference layer, a recording layer, a second interference layer, and a reflective layer, (columns 3-4, lines 62-12). The super resolution film can be one or more layers in a stacked configuration, meeting the requirements of claims 1-3 and 17, (columns 2-3, lines 61-3). Claim 3 has been interpreted to mean that the nonlinear optical layer is formed over the substrate.

Nagase et al also disclose that materials that can be used for the super resolution layer as selected from phase change materials such as photochromic materials, thermochromic materials, a semiconductor film, and semiconductor particle dispersed film, meeting the requirements of claim 5, (column 5, lines 23-39).

While Nagase et al do not specifically disclose that the nonlinear optical layer returns to an original value during one disk revolution, because the thermochromic material that can be used undergoes a phase change due to the focusing light, the claimed phase change timing would be inherently present in the prior art. A chemical composition and its properties are inseparable. *MPEP 2112.02*. Absent an objective evidentiary showing to the contrary that applicant's claimed invention provides unexpected results over the prior art, the addition of the claimed physical property to the claim language fails to provide patentable distinction over the prior art, meeting the requirements of claim 4.

7. Claims 1-3, 5-11 and 17-19 are rejected under 35 U.S.C. 102(b) as being anticipated by United States Patent no. 6,329,035, Iwasaki et al.

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Iwasaki et al disclose an information storage medium including a substrate with a first dielectric layer, an optical storage layer, a second dielectric layer, a reflective layer and a reversible image recording layer. In addition, an intermediate layer can be placed between the reflective layer and the reversible image recording layer. The optical storage layer can include phase change materials and magneto optical materials, meeting the requirements of claims 1-3 and 17-19, (column 5, lines 16-47).

Iwasaki et al also disclose titanium oxide can be used in the dielectric layers. Aluminum, silver, gold and other metals can be used as the reflective layer. The intermediate layer can be used as an adhesion promoting layer composed of a resin as the main component. Furthermore, the image recording layer can be made of electrochromic, photochromic, thermochromic, magnetic recording, bistable liquid crystal, and reversible thermosensitive recording materials, meeting the requirements of claims 5 and 7-11, (column 6, lines 21-60).

Iwasaki et al further disclose the reversible recording material can contain a triphenylmethane phthalide compound, meeting the requirements of claim 6, (column 10, lines 59-65). Additionally, displaying and recording on the optical data storage medium includes irradiating the medium with a laser beam to store and/or rewrite optically readable information on the medium and recording and/or rewriting part of the stored and /or rewritten information on the reversible recording layer, (column 19, lines 31-40).

8. Claims 1, 3, 5-6, and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by United States Patent no. 5,738,973, Abe.

Abe discloses an optical information recording medium composed of a substrate, an auxiliary layer, and a recording layer in that order, (column 6, lines 58-63). The materials for the

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auxiliary layers, whose transmittance changes with the energy of an incident light, can be thermochromic materials, photochromic materials, and phase transition materials having a thickness of 5-500 nm. Triphenylmethane dyes can be added to the auxiliary layer, meeting the requirements of claims 1, 3, 5-6, and 17, (columns 7-8, lines 58-34).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. Claims 1, 3, and 11-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent no. 6,329,035, Iwasaki et al in view of United States Patent no. 4,839,226, Sawada et al.

Iwasaki et al disclose the limitations of claims 1, 3, and 11 above. Specifically, the image recording layer, which is also a nonlinear film, can be made of electrochromic, photochromic,

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thermochromic, magnetic recording, bistable liquid crystal, and reversible thermosensitive recording materials, (column 6, lines 21-60). Iwasaki et al do not specifically disclose the specific magnetic materials that can be used .

Sawada et al disclose a magneto-optical recording medium wherein the magnetic oxide layer can be magnetoplumbite type ferrites, garnet type magnetic oxides, or cobalt spinel type oxides, (column 4, lines 5-39).

Iwasaki et al and Sawada et al disclose inventions that are drawn to recording mediums. Iwasaki et al specifically disclose that magnetic recording materials (column 6, lines 56-60) can be used as the recording layer. Sawada et al specifically disclose different types of magnetic materials that can be used in recording mediums. As such, it would have been obvious to one skilled in the art to apply the magnetic recording materials of Sawada et al to the information recording medium of Iwasaki et al to make a recording medium having a magnetic recording medium layer that has high light transmittance even when formed into a thick layer, (Sawada et al, column 4, lines 40-45).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gwendolyn A. Blackwell-Rudasill whose telephone number is (703) 305-9741. The examiner can normally be reached on Monday - Thursday; 6:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on (703) 308-3822. The fax phone numbers for the

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organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Gwendolyn A. Blackwell-Rudasill
Examiner
Art Unit 1775

GBR
gbr
May 1, 2003

Deborah Jones
DEBORAH JONES
SUPERVISORY PATENT EXAMINER